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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,550

03/27/2006

Deepak S. Turaga

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

02/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,550	Applicant(s) TURAGA ET AL.	
	Examiner SHEELA C. CHAWAN	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Preliminary Amendment

1. Preliminary amendment filed on 3/27/06 has been entered.
Claims 1-27 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 3/27/06 has been considered by the examiner.

Drawings

3. The Examiner has approved drawings filed on 3/27/06.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

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- (I) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-27, are rejected under 35 U.S.C. 102(b) as being anticipated by Yiannis Andreopoulos et al., (Listed in IDS, filed on 3/27/06) "Fully Scalable Wavelet Video Coding Using In-Band Motion

Compensated Temporal Filtering" 2003 IEEE April 10, 2003; pages 417- 420.

As to claim 1, Yiannis discloses an apparatus (365) in a digital video transmitter (110) for digitally encoding Primary Examiner, Art Unit 2624 video signals within an overcomplete wavelet video coder (210), said apparatus (365) comprising a video coding algorithm unit (365) that is capable of using location information of significant wavelet coefficients in a first video frame and motion information to temporally predict location information of significant wavelet coefficients in a second video frame (fig 3, page 418, temporal correlation are used to identify location information using mosaic compensated temporal filtering , MCTF indicates that the frames are in sequence).

As to claims 2, 11 and 20, Yiannis discloses an apparatus (365) as claimed in Claim 1 wherein said motion information comprises a motion vector between said first video frame and said second video frame (see fig 2, motion estimation is obtained from (over complete discrete wavelet transform ,ODWT of sequential frames, see section 3, and second paragraph).

As to claims 3, 12 and 21, Yiannis discloses an apparatus (365) as claimed in Claim 1 wherein said video coding algorithm unit (365) is further capable of receiving spatial prediction information from a spatial parent of said second frame and predicting location information of significant wavelet coefficients in said second video frame using one of: spatial prediction information from said spatial parent and temporal prediction information derived using said motion information (see section 3, paragraph 5 explains the spatial prediction information).

As to claims 4, 13 and 22 Yiannis discloses an apparatus (365) as claimed in Claim 3 wherein said video coding algorithm unit (365) identifies location information of significant wavelet coefficients in said second video frame when said temporal prediction information predicts a location for said significant wavelet coefficients in said second video frame and/or when said spatial prediction information predicts a location for said significant wavelet coefficients in said second video frame (section 3, paragraph 5, location information special domain information is obtained from ME/MC data).

As to claims 5, 14 and 23 Yiannis discloses An apparatus (365) as claimed in Claim 3 wherein said video coding algorithm unit (365) is capable of receiving temporal prediction information from a plurality of temporal parents of said second video frame and identifying location information of significant wavelet coefficients in said second video frame when a majority of said plurality of said temporal parents predict a location for said significant wavelet coefficients in said second video frame(temporal scalability(prediction) is explained in section 3, paragraph 1).

As to claims 6, 15 and 24, Yiannis an apparatus (365) as claimed in Claim 3 wherein said video coding algorithm unit (365) is further capable of receiving location information of significant wavelet coefficients from each of a plurality of video frames and motion information for each of said plurality of video frames and using said location information and said motion information to temporally predict location information of significant wavelet coefficients in said second video frame (section 3, paragraph 6 explains that the spatial domain location is used in predicting location information).

As to claims 7, 16 and 25, Yiannis discloses an apparatus (365) as claimed in Claim 6 wherein a first portion of said plurality of video frames occur before said second video frame and a second portion of said plurality of video frames occur after said second video frame (note, reconstruction of frames includes the sequential arrangement of frames e.g. first frame, second frame and so on section3, second paragraph).

As to claims 8, 17 and 26, Yiannis discloses an apparatus (365) as claimed in Claim 6 wherein said video coding algorithm unit (365) is further capable of creating at

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least one residue sub band by filtering at least one spatio-temporally filtered video frame through a high pass filter (section 3, paragraph 4, also fig 3, temporal filtering).

As to claims 9, 18 and 27, Yiannis discloses an apparatus (365) as claimed in Claim 1 wherein said video coding algorithm unit (365) is further capable of establishing an order for encoding clusters of significant wavelet coefficients using a cost factor C for each cluster (section 3, paragraphs 7, 8, and 9, explains the procedures for calculating bit budget (cost) of encoding and calculating motion vectors) where C is expressed as:

$$C = R + XD.$$

As to claims 10 and 19, Yiannis discloses a method for digitally encoding video signals within an overcomplete wavelet video coder (210) in a digital video transmitter (110), said method comprising the steps of:

locating significant wavelet coefficients in a first video frame; and temporally predicting location information of significant wavelet coefficients in a second video frame using location information of said significant wavelet coefficients in said first video frame and motion information (fig 3, shows the flow pattern of the method of coding video signals (see section 5), provides for locating wavelet coefficients, temporal techniques, are explained).

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chaddha (US. 6,233,017 B1) discloses multimedia compression system with adaptive block sizes.

Guetz et al., (US.6,091,777) discloses continuously adaptive digital video compression system and method for a web streamer.

Martucci et al., (US. 5,764,805) discloses low bit rate video encoder using overlapping block motion compensation and zerotree wavelet coding.

Gu et al., (US.7,006,568 B1) discloses 3D wavelet based video codec with human perceptual model.

Lee (US. 6,895,050 B2) discloses apparatus and methods for allocating bits temporally between frames in a coding system.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEELA C. CHAWAN whose telephone number is (571)272-7446. The examiner can normally be reached on 7.30- 5.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela C Chawan/

2/14/09

Primary Examiner, Art Unit 2624

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